

§ 29.1165

(d) Unless other means are provided, torque limiting means must be provided for accessory drives located on any component of the transmission and rotor drive system to prevent damage to these components from excessive accessory load.

[Doc. No. 5084, 29 FR 16150, Dec. 3, 1964, as amended by Amdt. 29-22, 49 FR 6850, Feb. 23, 1984; Amdt. 29-26, 53 FR 34219, Sept. 2, 1988]

§ 29.1165 Engine ignition systems.

(a) Each battery ignition system must be supplemented with a generator that is automatically available as an alternate source of electrical energy to allow continued engine operation if any battery becomes depleted.

(b) The capacity of batteries and generators must be large enough to meet the simultaneous demands of the engine ignition system and the greatest demands of any electrical system components that draw from the same source.

(c) The design of the engine ignition system must account for—

(1) The condition of an inoperative generator;

(2) The condition of a completely depleted battery with the generator running at its normal operating speed; and

(3) The condition of a completely depleted battery with the generator operating at idling speed, if there is only one battery.

(d) Magneto ground wiring (for separate ignition circuits) that lies on the engine side of any firewall must be installed, located, or protected, to minimize the probability of the simultaneous failure of two or more wires as a result of mechanical damage, electrical fault, or other cause.

(e) No ground wire for any engine may be routed through a fire zone of another engine unless each part of that wire within that zone is fireproof.

(f) Each ignition system must be independent of any electrical circuit that is not used for assisting, controlling, or analyzing the operation of that system.

(g) There must be means to warn appropriate crewmembers if the malfunctioning of any part of the electrical system is causing the continuous dis-

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charge of any battery necessary for engine ignition.

[Doc. No. 5084, 29 FR 16150, Dec. 3, 1964, as amended by Amdt. 29-12, 41 FR 55473, Dec. 20, 1976]

POWERPLANT FIRE PROTECTION

§ 29.1181 Designated fire zones: regions included.

(a) Designated fire zones are—

(1) The engine power section of reciprocating engines;

(2) The engine accessory section of reciprocating engines;

(3) Any complete powerplant compartment in which there is no isolation between the engine power section and the engine accessory section, for reciprocating engines;

(4) Any auxiliary power unit compartment;

(5) Any fuel-burning heater and other combustion equipment installation described in § 29.859;

(6) The compressor and accessory sections of turbine engines; and

(7) The combustor, turbine, and tailpipe sections of turbine engine installations except sections that do not contain lines and components carrying flammable fluids or gases and are isolated from the designated fire zone prescribed in paragraph (a)(6) of this section by a firewall that meets § 29.1191.

(b) Each designated fire zone must meet the requirements of §§ 29.1183 through 29.1203.

[Amdt. 29-3, 33 FR 970, Jan. 26, 1968, as amended by Amdt. 29-26, 53 FR 34219, Sept. 2, 1988]

§ 29.1183 Lines, fittings, and components.

(a) Except as provided in paragraph (b) of this section, each line, fitting, and other component carrying flammable fluid in any area subject to engine fire conditions and each component which conveys or contains flammable fluid in a designated fire zone must be fire resistant, except that flammable fluid tanks and supports in a designated fire zone must be fireproof or be enclosed by a fireproof shield unless damage by fire to any non-fireproof part will not cause leakage or spillage of flammable fluid. Components must be shielded or located so as